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EXAMINER

MOORE, IAN N

ART UNIT PAPER NUMBER

2661

DATE MAILED: 05/04/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/750,180

Applicant(s)

LAU ET AL.

Examiner

Ian N Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13, 19-21 and 24-26 is/are allowed.
- 6) ☒ Claim(s) 14-18, 22, 23, 27-29 and 31 is/are rejected.
- 7) ☒ Claim(s) 30 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities. **Claim 1** recites, "VLANS" in line 11. For consistency, it is suggested to use the lower case "s".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Merchant (U.S. 6,460,088).

Regarding Claim 27, Merchant'088 discloses a network device (see **FIG. 2, multiport switch 12**) for preventing a network from having a topology with partially intersecting VLANs (see **FIG. 1, VLANs environments between network nodes 14 and 22; see col. 1, lines 35-36**), the network device comprising:

Memory (see **FIG. 2, External memory 44; see col. 4, lines 8-15**);

one or more network interfaces (see **FIG. 1, MAC modules 20 to transmit and receives packets; see col. 2, lines 66-67**); and

a processor (see **FIG. 4, a combined system of Internal Rule Checker IRC 40, CPU IF 50, and optional host CPU 32**) configured to perform the steps of defining a new

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network circuit for the network device (see col. 9, lines 26-30; note that the DA lookup engine (i.e. IRC) defines/classifies the new network circuit/route of the received frame by looking up the address for the switch 12);

assigning a test VLAN to the new network circuit (see col. 9, lines 39-46; note that the combined system assigns/programs a VLAN to the new network circuit/route of the received frame);

determining assignments of VLANs to other network circuits associated with the network device (see FIG. 4, VLAN Configuration and Status Register 52; see col. 9, lines 26-35, 52-56; note that the combined system determines the VLANs in the VLAN register 52 to other network circuits/routes associated with the ports of the switch 12); and

determining if the test VLAN is acceptable (see col. 9, lines 44-45, 50-55; note that the combined system determines a VLAN in the VLAN register 52 and assigns a VLAN for the new network circuit/path/route. Thus, it is clear that the VLAN is acceptable).

Regarding claim 28, Merchant'088 discloses determining if the test VLAN is completely distinct from all of the other VLAN assignments (see col. 9, lines 26-35, 52-56; note that the combined system must determine whether/if a VLAN is completely-distinct/new according to the other VLANs in the VLAN register 520 before a VLAN is assigned); and

accepting the test VLAN in response to a determination that the test VLAN is completely distinct from all of the other VLAN assignments (see col. 9, lines 44-45, 50-55;

after the combined system determines that a VLAN is new/completely-distinct according to the other VLANs in the VLAN register 52, it assigns a VLAN for the new network circuit/path/route).

Regarding claim 29, Merchant'088 discloses determining if the test VLAN intersects entirely with one of the VLAN (see col. 9, lines 26-35, 52-56; note that the combined system must determine whether/if a VLAN intersects-entirely/identical to the other VLANs in the VLAN register 520 before a VLAN is assigned); and

accepting the test VLAN in response to a determination that the test VLAN intersects entirely with one of the other VLANs (see col. 8, lines 45-50; col. 9, lines 44-45, 50-55, col. 11, lines 24-27; after the combined system determines that a VLAN is identical/matched according to the other VLANs in the VLAN register 52, it must assign a VLAN from within one of the existing VLANs (i.e. unmodified VLAN since VLAN is already defined/assigned) for the new network circuit/path/route).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 14-18,22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raab'967 in view of Marimuthu (U.S. 5,878,232).

Regarding Claims 14 and 22, Raab'967 discloses a computer program embodied on a computer readable medium (see **method/computer program processes FIG. 15 and 16; see FIG. 4, a combined system of VAC manager 320, VAC process 331, Topology Tables 332 and VLAN devices 410 performs the method**) for preventing a topology with partially intersecting VLANs (see **FIG. 1a and 1b, VLANs within Switch Inter-networks; see col. 5, lines 15-19**) by restricting the assignment of VLANs associated with a network element (see **FIG. 4, VLAN device 410**) to executed a method comprising the code segment for:

defining a new network circuit (see **col. 7, lines 45-50; a new network path/circuit/route of the newly added end-station**) for the network element (see **col. 7, lines 56-59; note that a new network path/circuit/route, which needs to be configured/re-configured, is determined/defined for the VLAN device**);

assigning a test VLAN (see **col. 14, , lines 1-3, 50-63; VLAN creation**) to the new network circuit (see **col. 8, lines 5-19, col. 14, lines 28-30, col. 16, lines 1-12; note that a VLAN is created/assigned for the new network path/circuit/route**);

determining assignments of VLANs to other defined network circuits associated with the network element (see **FIG. 15a, 1504, 1506, 1512 and FIG. 15b, steps 1516,1518; see FIG. 16, step 1602; col. 6, lines 30-45, col. 8, lines 36-46, col. 13, lines 64-67; note that the existing/assigned VLANs (i.e. topology tables) associated/related to other network path/route/circuit are determined**), and

associating the route to the test VLAN if the test VLAN intersects entirely and identical with one of the other VLANs (see FIG. 15a, step 1506, see FIG. 15b, step 1518, see FIG. 16, step 1602 and 1606; see col. 8, lines 5-19, col. 14, lines 28-30, col. 15, lines 60-67, col. 16, lines 1-12; note that before assigning a VLAN to the new network path/route/circuit, the method/step determines whether/if the VLAN is identical/entirely-interest with one of the existing VLANs. Then, the new network route/path/circuit is associated/related to the VLAN),

wherein the assigned route will be identical to route associated with the one of the other assigned VLANs (see FIG. 16, step 1604 and 1608; see col. 7, lines 53-56, see col. 15, lines 55- to col. 16, lines 1, 14-20; note that the new network route/path/circuit is identical to the route of existing VLAN if the newly added station is utilized the same existing VLAN);

Raab'967 does not explicitly disclose associating a spanning tree to the VLAN.

However, the above-mentioned claimed limitations are taught by Marimuthu'232. In particular, Marimuthu'232 teaches associating a spanning tree/route to the VLAN (see col. 2, line 35-40; note that spanning tree procedure is performed on each VLAN, thereby, associating a spanning tree to the VLAN).

In view of this, having the system of Raab'967 and then given the teaching of Marimuthu'232, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Raab'967, by providing a mechanism of associating a spanning tree procedure on each VLAN, as taught by Marimuthu'232. The motivation to combine is to obtain the advantages/benefits taught by Marimuthu'232 since

Marimuthu'232 states at col. 1, line 51-61 that such modification would overcome any topology that forms routing loops.

Regarding claim 15, the combined system of Raab'967 and Marimuthu'232 discloses all aspects of the claimed invention set forth in the rejection of Claim 14 as described above. Marimuthu'232 further teaches running a unique spanning tree/route for each unique VLAN assigned to the network element (**see col. 2, line 35-40; note that spanning tree procedure is performed on each VLAN; thus, it is clear a unique spanning tree procedure is performing to each VLAN**).

In view of this, having the system of Raab'967 and then given the teaching of Marimuthu'232, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Raab'967, by providing a mechanism of performing a spanning tree procedure on each VLAN, as taught by Marimuthu'232, for the same motivation that stated above in Claim 14.

Regarding Claims 16 and 23, Raab'967 discloses a computer program embodied on a computer readable medium (**see method/computer program processes FIG. 15 and 16; see FIG. 4, a combined system of VAC manager 320, VAC process 331, Topology Tables 332 and VLAN devices 410 performs the method**) for preventing a topology with partially intersecting VLANs (**see FIG. 1a and 1b, VLANs within Switch Inter-networks; see col. 5, lines 15-19**) by restricting the assignment of VLANs associated with a network element (**see FIG. 4, VLAN device 410**) to executed a method comprising the code segment for:

defining a new network circuit (see col. 7, lines 45-50; a new network path/circuit/route of the newly added end-station) for the network element (see col. 7, lines 56-59; note that a new network path/circuit/route, which needs to be configured/re-configured, is determined/defined for the VLAN device);

assigning a test VLAN (see col. 14, lines 1-3, 50-63; VLAN creation) to the new network circuit (see col. 8, lines 5-19, col. 14, lines 28-30, col. 16, lines 1-12; note that a VLAN is created/assigned for the new network path/circuit/route);

determining assignments of VLANs to other defined network circuits associated with the network element (see FIG. 15a, 1504, 1506, 1512 and FIG. 15b, steps 1516,1518; see FIG. 16, step 1602; col. 6, lines 30-45, col. 8, lines 36-46, col. 13, lines 64-67; note that the existing/assigned VLANs (i.e. topology tables) associated/related to other network path/route/circuit are determined), and

associating the route to the test VLAN if the test VLAN is completely distinct from all of the other VLAN assignments (see FIG. 15a, step 1506, see FIG. 15b, step 1518, see FIG. 16, step 1602 and 1606; see col. 8, lines 5-19, col. 14, lines 28-30, col. 15, lines 60-67, col. 16, lines 1-12; note that before assigning a VLAN to the new network path/route/circuit, the method/step determines whether/if the VLAN is completely-distinct/new compare to the existing VLANs. Then, the new network route/path/circuit is associated to the VLAN),

Raab'967 does not explicitly disclose associating a spanning tree to the VLAN.

However, the above-mentioned claimed limitations are taught by Marimuthu'232. In particular, Marimuthu'232 teaches associating a spanning tree/route to the VLAN (see col. 2,

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line 35-40; note that spanning tree procedure is performed on each VLAN, thereby, associating a spanning tree to the VLAN).

In view of this, having the system of Raab'967 and then given the teaching of Marimuthu'232, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Raab'967, by providing a mechanism of associating a spanning tree procedure on each VLAN, as taught by Marimuthu'232. The motivation to combine is to obtain the advantages/benefits taught by Marimuthu'232 since Marimuthu'232 states at col. 1, line 51-61 that such modification would overcome any topology that forms routing loops.

Regarding claim 17, the combined system of Raab'967 and Marimuthu'232 discloses all aspects of the claimed invention set forth in the rejection of Claim 16 as described above. Marimuthu'232 further teaches wherein the new spanning tree is completely unique from all other associated spanning trees (see col. 2, line 35-40; **note that unique spanning tree procedure is performed on each VLAN; thus, one a spanning tree procedure is unique from all spanning tree procedures performed at VLANs).**

In view of this, having the system of Raab'967 and then given the teaching of Marimuthu'232, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Raab'967, by providing a mechanism of performing a spanning tree procedure on each VLAN, as taught by Marimuthu'232, for the same motivation that stated above in Claim 16.

Regarding claim 18, the combined system of Raab'967 and Marimuthu'232 discloses all aspects of the claimed invention set forth in the rejection of Claim 14 as described above. Raab'967 wherein the route is identical to the route associated with one of the other VLAN assignments if the one of the other VLAN assignments has an identifier (see FIG. 7, Table 700; see col. 9, lines 45-50) that is identical to an identifier associated with the test VLAN (see FIG. 15a, step 1506, see FIG. 15b, step 1518, see FIG. 16, step 1602 and 1606; see col. 8, lines 5-19, col. 14, lines 28-30, col. 15, lines 60-67, col. 16, lines 1-12; note that before assigning a VLAN to the new network path/route/circuit, the method/step determines whether/if the VLAN ID/number is identical with one of the existing VLANs IDs/numbers. Then, the new network route/path/circuit is associated to the VLAN ID). Marimuthu'232 teaches associating a spanning tree/route to the VLAN (see col. 2, line 35-40; note that spanning tree procedure is performed on each VLAN, thereby, associating a spanning tree to the VLAN).

In view of this, having the system of Raab'967 and then given the teaching of Marimuthu'232, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Raab'967, by providing a mechanism of performing a spanning tree procedure on each VLAN, as taught by Marimuthu'232, for the same motivation that stated above in Claim 16.

4. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Merchant'088 in view of Marimuthu'232.

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Regarding claim 31, Merchant'088 discloses determination that the test VLAN is acceptable as described above in claim 27.

Merchant'088 does not explicitly disclose associating a new spanning tree to the test VLAN, responsive to a determination the test VLAN.

However, the above-mentioned claimed limitations are taught by Marimuthu'232. In particular, Marimuthu'232 teaches associating a new spanning tree to the test VLAN, responsive to a determination that the test VLAN is acceptable (see col. 2, line 333-40, 47-50, 62-65; note that the spanning tree procedure is performed to the new VLAN responsive/reactive to creating a new/test VLAN).

In view of this, having the system of Merchant'088 and then given the teaching of Marimuthu'232, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Merchant'088, by providing a mechanism of associating a spanning tree procedure on the new VLAN, as taught by Marimuthu'232. The motivation to combine is to obtain the advantages/benefits taught by Marimuthu'232 since Marimuthu'232 states at col. 1, line 51-61 that such modification would overcome any topology that forms routing loops.

Allowable Subject Matter


5. Claims 1-13, 19-21, and 24-26 are allowed.
6. Claim 30 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 703-605-1531. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 703-305-4798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER